

## NORTH PACIFIC OCEAN, JANUARY 1934

By WILLIS E. HURD

**Atmospheric pressure.**—Barometer readings throughout northern waters of the North Pacific Ocean during January 1934 changed greatly from those of the preceding month. While in December the Aleutian Low was practically nonexistent, in January it was strongly centered east of the Peninsula of Alaska, with average pressure at Kodiak, 29.37 inches, which was 0.22 inch below the normal. At this station the highest pressure of the month was 29.96, on the 23d.

From northern Japan eastward a succession of Lows, many of them deep and extensive in area, crossed northern and middle Pacific waters. In middle longitudes cyclonic conditions extended farther south than usual, as they did in December, with the result that Midway Island continued to have abnormally low pressure. The average barometer over the Philippine Islands was also much lower than usual for the month.

The lowest pressure reading at sea during January was 28 inches, reported by the American S.S. *Golden Sun*, near 52° N., 151° W., on the 30th.

The North Pacific anticyclone lay centered off the California coast. While variable in area, its average center was not penetrated by cyclones at any time in the month. Another anticyclone covered the seas between Japan and China.

TABLE 1.—Averages, departures, and extremes of atmospheric pressure at sea level, North Pacific Ocean, January 1934, at selected stations

Stations	Average pressure	Departure from normal	Highest	Date	Lowest	Date
	Inches	Inch	Inches		Inches	
Point Barrow.....	30.08	0.00	30.58	14, 15	29.62	21
Dutch Harbor.....	29.51	— .07	30.44	11	28.44	27
St. Paul.....	29.68	+ .05	30.54	11	28.78	28
Kodiak.....	29.37	— .22	29.96	23	28.84	28
Juneau.....	29.62	— .26	30.31	5	29.03	16
Tatoosh Island.....	30.10	+ .12	30.55	6	29.41	19
San Francisco.....	30.22	+ .11	30.45	8	29.69	1
Mazatlan.....	29.98	+ .03	30.14	9	29.92	3, 18, 20, 24
Honolulu.....	30.03	+ .03	30.16	8	29.90	26
Midway Island.....	29.93	— .10	30.14	13	29.50	28
Guam.....	29.92	+ .02	29.98	14, 25, 26, 30	29.80	7
Manila.....	29.87	— .11	29.98	25	29.82	12, 13, 31
Naha.....	30.13	+ .05	30.34	25	29.86	31
Chichishima.....	30.03	+ .02	30.30	28	29.66	4
Nemuro.....	29.80	— .04	30.40	28	29.16	12

NOTE.—Data based on 1 daily observation only, except those for Tatoosh Island, San Francisco, and Honolulu, which are based on 2 observations. Departures are computed from best available normals related to time of observation.

**Cyclones and gales.**—Stormy weather prevailed over portions of the North Pacific on practically every day in the month, but was most concentrated over individual areas between 160° E. longitude and the coast of Japan, and latitudes 30° and 45° N. In this region there were at least 16 days having gales of force 8 and over, with the maximum force 11, occurring on the 1st and 2d south-east of the Kuril Islands. Barometer readings below 29 inches occurred during the prevalence of the heavier gales. The minima reported were 28.30 inches (uncorrected), on the 1st, and 28.67, on the 2d, both at or near 45° N., 154°–162° E. Near this region (in 44° N., 168° E.) the Japanese M.S. *Nankai Maru* reported a corrected minimum reading of 28.22, without gale winds, on the 29th.

East of Honshu, in the 5-degree square 35°–40° N., 145°–150° E., gales of force 8–10 were reported on 7 days, 4 of the days, 12th to 15th, being successive. Toward midocean the frequency of gales rapidly diminished until, between latitude 35° N., and the central Aleutians, few high winds were reported.

During several of the last days of the month the neighborhood of Midway Island was under the influence of a strong low centered far to the northward. Gale winds during the period occurred only in the southern quadrants

of this cyclone, and from the 26th to 29th the Dutch motorship *Manoeran* encountered severe gales from near Midway eastward to 32° N., 155° W.

There were approximately 10 days in January with gales over the eastern third of the northern and central steamer routes. These were well distributed throughout the month. The maximum force was 11 from the west on the 19th, near 43°30' N., 133°30' W.

At the time of the low pressure reading of 28 inches reported by the *Golden Sun* in the cyclone of the 30th, south of Kodiak, the wind was only of force 8, from southeast. The strongest wind reported in this storm, despite its great depth, was of force 10, near 52° N., 151° W., on the 31st.

**Tropical gales.**—No low-latitude gales seem to have occurred in the Tropics of the Far East. In the Gulf of Tehuantepec a norther of force 8 occurred on the 7th, and on the 16th a moderate north gale was experienced in the Bay of Panama.

**Fog.**—The great percentage of the North Pacific fog occurred along the American coast. Fog was reported on 5 days between the mouth of the Columbia River and Eureka; on 13 days between Eureka and Point Arguello; and on 17 days thence southward to Cape San Lucas. Its appearance was sporadic elsewhere over the ocean.

## SUMMARY OF SEA-SURFACE TEMPERATURE DATA FOR 1933

By GILES SLOCUM

Table 1 shows the mean monthly sea-surface temperatures for each month of 1933 in the Caribbean Sea and the Straits of Florida. For comparison, the 13-year means (1920 to 1932, inclusive) have been included as "normal." The data for December 1933 are based on incomplete returns and may be somewhat revised in future publications of data involving 1933 sea-surface temperatures.

## CARIBBEAN SEA

The Caribbean Sea was warmer than normal during the first 10 months of 1933. This was the fourth successive year with temperatures of the surface water in that area almost continuously above the 13-year average. No record high or low average temperatures occurred for any month, though June 1933 was the second warmest June in the 14 years record from 1920 to 1933. The temperatures from January to May were only slightly above normal. Those of the summer months were unusually high.

## STRAITS OF FLORIDA

The Straits of Florida were much warmer than normal during the first 5 months. The temperatures for April and May 1933 were new record highs. The summer temperatures were lower than normal. As a whole, 1933 was a year of warmer than normal temperature in the Straits of Florida surface waters.

TABLE 1.—Mean sea-surface temperatures (° F.), for each month of 1933

Year and month	Caribbean Sea		Straits of Florida	
	Mean	13-year normal	Mean	13-year normal
	° F.	° F.	° F.	° F.
January.....	79.4	79.1	75.6	74.9
February.....	78.6	78.5	75.9	74.7
March.....	79.1	78.8	75.2	74.9
April.....	80.0	79.4	78.2	76.7
May.....	81.3	80.7	80.0	78.8
June.....	82.6	81.5	81.4	81.5
July.....	82.5	81.8	83.0	83.2
August.....	83.0	82.4	83.7	84.0
September.....	83.5	82.9	83.3	83.5
October.....	82.8	82.6	81.8	81.5
November.....	81.6	81.7	79.0	78.7
December.....	80.2	80.4	76.6	76.6
Year.....	81.2	80.8	79.5	79.2

<sup>1</sup> Preliminary figures from incomplete data.